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# AMERICAN JOURNAL OF PHOTOGRAPHY

AN ILLUSTRATED MONTHLY  
DEVOTED TO PHOTOGRAPHY IN ITS  
WIDEST SENSE

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AMERICAN JOURNAL OF PHOTOGRAPHY,  
JUNE, 1897.



JOHN BARTLETT.

BUTTERCUPS AND DAISIES.  
CRAMER-ISCHROMATIC PLATE.  
WITHOUT COLOR SCREEN.

PHILADELPHIA.



# AMERICAN JOURNAL OF PHOTOGRAPHY

THOS. H. McCOLLIN, Managing Editor.

JOHN BARTLETT, Editor.

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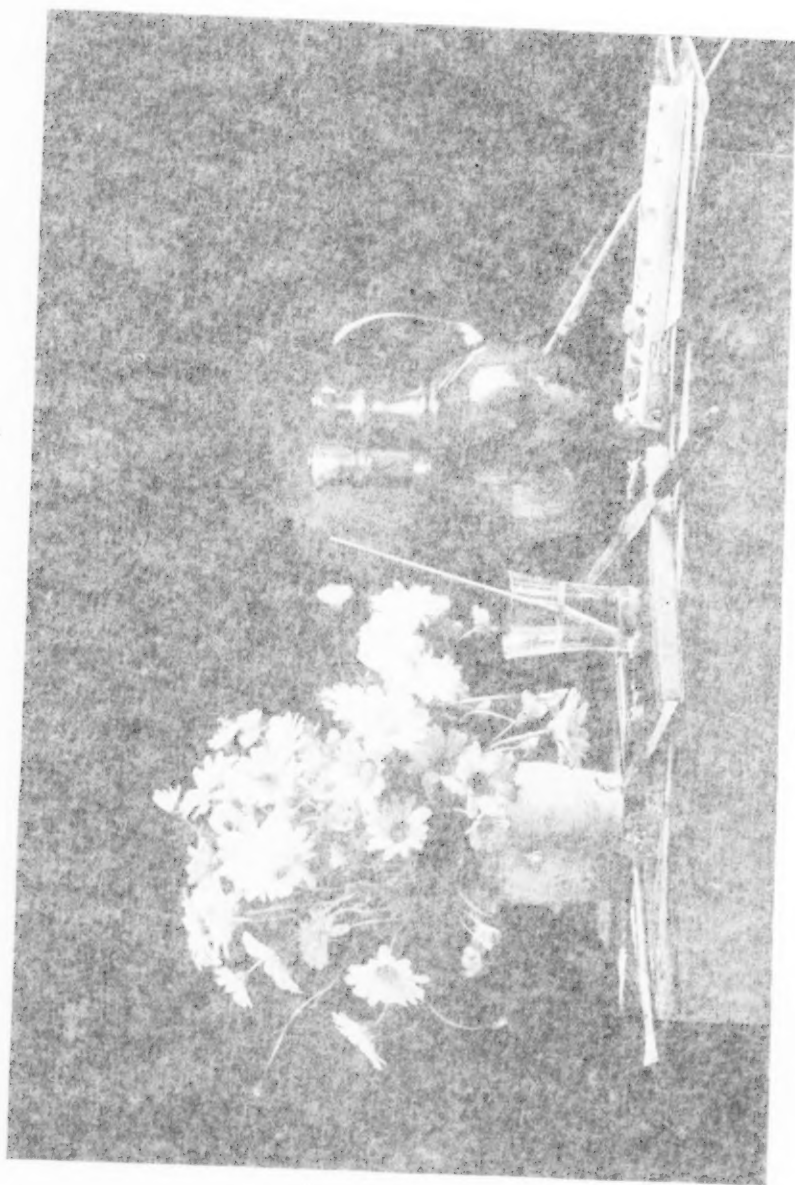
[T] MAY be salutary to our growth and improvement, though not flattering to our national pride of being ranked as the originator of that peculiar institution, the Photographic Convention. To learn of the low estimation in which the organization in general and the American conception of it in particular are held by so prominent a man in the photographic community as Mr. D. F. Robinson, who gives expression to his opinion in a recent number of the *British Journal of Photography*.

The very name "convention" is objectionable to him, almost as objectionable as "photogram" or "study." Our application of either misapplication of the word, is an evidence of the commission of another national sin,—the murder of the king's English. Had this gathering-together project originated in Great Britain, Mr. Robinson thinks that the inborn love of etymological truth of the native Briton would have caused the selection of the more exact and appropriate appellation "congress."

Undoubtedly this term would logically better express the idea one has of a convention. But the word congress has differentiated in our country somewhat from the original English conception, and convention has come to mean something more specific, as the assemblage of a particular guild or profession. Mr. Robinson, we are sure, does not intend anything but friendly criticism. His remarks are really pertinent, and might be appo-



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BUTTERCUPS AND DAISIES.

PROCESSED BY H. W. H. & CO.



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The very name "convention" is objectionable to him, almost as obnoxious as "photogram" or "study." Our application or rather misapplication of the word, is an evidence of the commission of another national sin,—the murder of the king's English. Had this gathering-together project originated in Great Britain, Mr. Robinson thinks that the inborn love of etymological purism of the native Briton would have caused the selection of the more exact and appropriate appellation "congress."

Doubtless this term would logically better express the idea one has or should have of a convention. But the word congress has differentiated in our country somewhat from the original English conception, and convention has come to mean something more specific, as the assemblage of a particular guild or profession. Mr. Robinson, we are sure, does not intend anything but friendly criticism. His remarks are really pertinent, and might be appro-



priated as a healthful guide to the management of such affairs, but badly as all conventions are conducted, they are surely productive of more moral, social and intellectual edification than foot-ball, cricket, or even loan collections. But here, to do justice to our critic, we should explain that he is referring to conventions in general. It is indeed too true that the stock-dealer, the manufacturer and the advertiser, and, we may add, Sir Oracle himself, are allowed too great prominence, and consequently absorb too much attention with their gratuities and the exhibition of their disinterested zeal for the promotion of the art. Surely the refined element of the profession, and we would assure Mr. Robinson that it is not void of culture and gentility in this country, were disgusted last summer with the display of coarseness, almost bordering on vulgarity, with which some self-constituted instructors sought to impress the assembly with the idea of their possession of taste and ability.

The reaping of crops of local conventions throughout the year is also of doubtful propriety, and injurious to helpful centralization. Even the holding of one convention yearly hardly affords time enough to show the necessarily slow progress in art or technical skill, but the prizes must be got rid of and business pushed through merit be repressed and the true interests of the profession ignored. But we are for conventions, and for our American convention, and we do not believe that it has had its formation solely in the selfish desire of American dealers in photographic apparatus and materials to promote their trade. Our American convention has done much good in the past, and under proper management it will do much in the future, if only more interest is taken in it by those who in former years upheld the hands of the management by their presence, their influence, the exhibition of their work, and the publication of their ideas and opinions.

It is a delight to turn back to the old journals and read the discussions of the eminent men of the profession, some of whom have passed to the great majority, but some of whom still are with us, and when they choose to take part at times in our proceedings are welcomed with grateful applause.



Yes, we are for the convention. Co-operation, after all, is the grand lever of true progress. There is a higher phase of social evolution than that made known by the gladiatorial theory of the naturalist. There comes a time when the struggle for existence ceases to be the factor even for self-advancement. Altruism, or Unselfishness, is the only supreme law of nature, and by laboring for others we are pushing up to a higher self more surely than by sordid egoism. Everything in nature must really live for others or degenerate. It must surrender often its most costly gifts, but in the surrender it has itself passed into a higher sphere and enjoyed a higher felicity.

Darwin, though he explained the doctrine of the selfish struggle for existence, declares that "those communities of animals which include the greatest number of the most sympathetic members flourish the best." Mutual aid is as much a law of animal life as mutual struggle. It has a far greater importance, inasmuch as it favors the development of such habits and character as insure the maintenance and further development of the species together with the greatest amount of welfare and enjoyment of life for the individual, with the least waste of energy. The solitary animal must die. Unsocialness has no part in creation.

Remember the injunction of the great apostle : "Brethren, forsake not the assembling of yourselves together."

THESE is a good deal of opposite opinion as to the utility of the yellow screen in photography. Very often the photographer, by its injudicious employment, actually reverses the order of color in the spectrum in his zeal to exalt the yellow and repress the blue.

It is true that the orthochromatic plate when exposed alone under a very intense glare of light is no better than an ordinary plate ; simply because at such times an immense radiation of white light takes place from yellow and red objects as well as from the blue ; but it is just in such conditions that the demands for the yellow screen are imperative if one is anxious for a correct monochrome rendering of the scene.



At the close of the day and during the Fall season the light is of a less intense character, more yellowish, and more caution should be observed in the use of the screen. It may be employed of too deep a yellow. There is danger of intensifying the shadows, and so of producing harsh, unpleasant negatives, and of blaming orthochromacy, of course. We have seen the beautiful atmospheric effect on a landscape entirely wiped out by the use of an orthochromatic plate and color screen, when even an ordinary plate would have preserved it. It should be remembered that no one color screen is applicable to all cases, and that unless there is a predominance of deep orange and red, and considerable blue, it is worse than useless, finer results being secured without it. Under-exposure is the chief error fallen into by the users of orthochromatic plates. They will stand an amount of exposure which would hopelessly ruin an ordinary plate. Unless very fully exposed there is great danger of harshness,—far more so than in the ordinary plate.

WE have said that the tendency is to under-time orthochromatic plates : may not the same charge be laid to the users of ordinary plates ? Professionals as well as amateurs are apt to presume too much on the wonderful ability of the modern emulsion to record impressions in almost no appreciable time, and so lose in their negatives the beautiful gradation of tone.

We were made conscious of the prevalence of this tendency by an examination of many of the photographs of the ceremonies attending the recent unveiling of the Washington monument in our city. A little more time would have made them more agreeable, and yet would not have translated any sign of movement.

When the dry plate made its appearance it was so constituted that we had to come pretty near the correct exposure, and might risk too much by over-timing as well as under-timing. Modification of excess was not as well secured by the developers then as now, and the plates themselves had nothing like the latitude of exposure they will tolerate now-a-days. Indeed, who would have dared some years ago to make a transparency on a rapid



plate. Now with a brief exposure, a more restrained and judicious development we may get as brilliant results as with an old-time slow plate.

The percentage of good negatives from amateurs' plates that have been over-exposed is greater than in former years. True, the modern dry plate will also stand more prolonged development than its prototype, but the error is more easily compensated for and the result always more pleasing with over-exposures.

It will be seen that we are not advocates of the one-solution developer, to which the plates, no matter to what degree of exposure they have been submitted, are consigned. The only rational method of development is to have the power in our hands to modify at pleasure the production of the latent image.

THE marvelous degree of sensitiveness obtainable with our modern dry plate, with its sensitometer number ranging up to three-score and ten, is apt to make the younger generation of photographers imagine that gelatino-bromide of silver and instantaneousness are one and inseparable. Yet there are many among us whose locks are not yet silvery with Time's touch, who could give formulæ for bath and collodion by which a considerable degree of rapidity could be secured with the old wet plate process. But further back than this time, somewhere about 1850, we read of a process for obtaining very rapid plates, which, to judge from the results chronicled, must have been exceeding sensitive even to a moderate degree of illumination. The process, as recorded in the London "Athenæum" for 1850, is by Fox Talbot, and surely deserves a repetition from modern experimenters.

A weak solution of nitrate of silver is mixed with alcohol, so that one ounce of the mixture may contain three grains of nitrate. A plate coated with albumen, and dried by a strong heat, is applied to the silver solution, and allowed to dry spontaneously. It is then washed with distilled water to remove any excess of silver, and treated to a second coat of albumen, but in drying less heat is to be used. To an aqueous solution of proto-iodide of



iron, add first an equal volume of acetic acid, and then ten volumes of alcohol. Allow the mixture to repose two or three days. At the end of that time it will have a changed color, and the odors of acetic acid and alcohol will have disappeared,—the liquor will have obtained a peculiar vinous odor. It is to be used in this state.

Into the iodide thus prepared and modified, the plate is dipped for a few seconds. All this operation should be performed under yellow light.

A solution is now made of nitrate of silver containing seventy grains to the ounce of water. To three parts of this add two of acetic acid. Then if the prepared plate is rapidly dipped once or twice into this solution it acquires a very high degree of sensibility, and it ought then to be placed in the camera without delay. The development is effected by the use of the proto-sulphate of iron, without the use of any restraining acid.

The high sensibility of the process will be appreciated from an account of an experiment tried at the Royal Institution. A glass plate prepared as above was placed in the camera, properly adjusted, in a darkened room, so that it was in focus to receive the image of a revolving wheel. Upon the wheel was placed a printed bill, and when the wheel was making two hundred revolutions a second, it was illuminated by a spark from the discharge of a Leyden battery.

Notwithstanding the rapidity, the very transient and comparatively weak illumination, the bill was faithfully printed on the photograph plate.

The peculiarity of the process is the degree of sensitiveness obtained in connection with albumen, the employment of albuminate of silver as a substratum for the sensitive film, and the use of proto-iodide of iron as a re-sensitizer. A theory was advanced at the time to account for the great sensitiveness by supposing the formation of a peculiar ether, or rather an iodide of ether. Whether this is correct or whether the nitrate of iron has a peculiar influence, being a powerful reducing agent, is worthy of investigation.



To obtain a clear impression from the wheel making two hundred revolutions a second, and with the not very strong illumination from a Leyden battery, would be even a severe test for our modern plates.

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#### THE REPRODUCTION OF NEGATIVES.

IT might seem like a sophism to say that a reproduced negative may be made better than the original, but by careful manipulation such a thing can be accomplished.

Very often a large number of prints is demanded from a single negative in a short time. The negative may be a valuable one, and danger always attends the printing of a large edition from a single cliché, moreover the weather may be bad, and the time of exposure necessarily increased. The desire to duplicate our negative is natural, and that there may be no difference in the results, we are anxious to have the duplicate of as good character as the original.

Perhaps the original may be too flat, and thin, and troublesome for the printer in his efforts to secure good impressions. It needs intensification, but as it is not his own, he dare not risk the doctoring of it. Our resource is to reproduce. We have tried the various methods of making a negative direct from a negative. The process is intensely interesting, scientifically, but not so intensely interesting, practically, and we are inclined to make a positive first and then a negative therefrom. Perhaps my method, which has been very successful in my hands, will be of interest to the practical readers of your journal. Even when the original is defective or has spots and cracks upon it, it can be bettered in the reproducing. Sometimes a reversed negative is wanted for certain processes, but I believe they are not as much needed now as formerly. Well, it can be made reversed in the reproduction.

First give a good scrutiny to the original as to its density, that is, its uneven density, its color, etc. Clean off carefully the back, and then select a deep printing frame a size larger than the nega-



tive. Fit into it instead of the usual glass, a nice piece of clear glass, free from bubbles, scratches, etc., then arrange the negative in the centre of the frame, being careful to brush away with a soft brush all filaments, dust or grit, and place the plate, film side down, on the negative's face in close contact. Put the dark pad in to secure good pressure, and place the back of the frame in and press the springs carefully in place. All is ready now for exposure, which should be made at about 18 inches from a gas jet or oil light. Of course the time is determined by the character of the negative and the rapidity of the plate used. It is best to use a slow plate for the positive, because it gives you time to consider; but a rapid plate, as they make them now-a-days, could be used. Carbutt's B. is a good brand, but don't use process plates for this purpose, they would give too great density in the positive. If the original is very dense it would be, perhaps, better to use a rapid plate. The plate should also be a size larger than the original, to escape, in the copy, the marks of the edges of the plates, and also to get the benefit of the best portion of the emulsion; for, if any portion of the negative is thin, it should be shaded during exposure by moving a cardboard over the spot. If certain parts are denser, cut a hole in a card and place the aperture over the dense part, keeping the card also moving and give the spot the extra advantage of more exposure.

After having estimated the proper time for exposure, proceed to development. I recommend Pyro. and potash, inasmuch as it gives one better control over the process.

A weak developer is to be preferred, as the exposure ought to be full. Do not get the positive too dense, but secure all the detail. If the original has been flat and thin, the positive, however, may need some contrast which the addition of Pyro. will secure. Sometimes the addition of Bromide will be found necessary.

Having dried the positive, carefully spot out all pin-holes and do any work necessary on it, retouching or strengthening weak portions, or reducing too dense spots. You may even obliterate the marks of cracks, etc., of the original by careful work on the positive.



The making of the negative is now in order, and about the same procedure is gone through. Proper exposure and weak developer, with Pyro. and soda or potash, with a trifle of Bromide.

The chief thing to remember in reproducing negatives is to secure the proper kind of positive. It ought to be slightly over-exposed, gray in color, full of detail—which should be seen without much effort to the eyes. Reject all yellow-colored positives. They give flat negatives. You might think I ought to recommend some of the other developers than Pyro. to avoid stain, but Pyro., if properly treated, gives the cleanest positives and negatives. After development, before washing at all, first sponge the plate over with a cotton dipped in weak acetic acid water (1 dram to pint), then allow the plate to lie in the acetic acid bath a couple of minutes, then thoroughly wash under the tap before fixing, and there will be no danger of stain. Sulphite in the developer also lessens the liability to stain.

Hardness and chalkiness is apt to occur with the beginner in making reproductions, because it is hard to persuade him that a brilliant positive is not always necessary. A rather over-exposed positive gives the finest results unless the negative to be reproduced is an exceedingly tame, thin, flat one. With cleanliness and good judgment, success is assured.

W. H. R.

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#### OUR PICTURE.

The frontispiece is a flower study, introduced to show the importance of isochromacy in properly rendering color values. The daisies are of the light yellow variety, with deep yellow centres. The vase containing them, light blue; the pitcher a somewhat darker shade of blue than the vase, but of a color which an ordinary plate would have rendered much lighter in tone. Anticipating the more correct rendering by the isochromatic plate, and also assisting the translation of color somewhat by placing the pitcher in the shade, the photographer has relieved it by putting it against a lighter portion of the drapery—a small canvas screen—the drapery proper is of a dark green color. The proper rendering of the blues is excellent, considering no color screen was employed to depress the tone. Cramer's Medium Isochromatic.



## SILVER ALBUMEN.

SILVER paper, despite the invasion of the labor-saving, ready-made substitutes, has not yet been relegated to the limbo of desuetude, though the Aristo paper makers have been repeatedly ringing its knell.

True, it has had something of a declination, but I think we may reasonably look for its right-ascension again in the photographic firmament. To me it has always been "a bright particular star," and I think it will long remain a favorite medium for expression of artistic printing with our skilled workers.

The desire now-a-days to gratify the rule of thumb, *soi disant* photographer with inflexible formulæ, which accompany the packages, has made the proper management of the old-time silver printing bath a subject demanding too much self-reliance.

I trust, therefore, that you will permit me to occupy a few lines in your journal with a method which, followed with judgment, will yield as beautiful results as either platinum or carbon, and which does not fall far behind either of these modes of printing in yielding permanent results, and which offers a far more flexible means of accommodation to the peculiarities of the negative.

To obtain the best results in platinum a particular sort of negative is demanded. I do not know whether this is the case with carbon or not, but I do know that silver printing accommodates itself to all negatives, and will often, under skillful management, bring out latent beauties which were not expected.

As our albumen paper in the market is salted it will be found that 60 grains of silver to the ounce of water is the proper strength to employ. Use pure nitrate of silver crystals and pure water.

After solution of the silver, add a small quantity at a time of bi-carbonate of soda, shaking the bottle with each addition; stop the addition when a single precipitate is formed, which will no more dissolve on shaking.

For every 480 grains of nitrate, add one minim of concentrated aqua ammonia. Shake and allow the bottle to stand about 12 hours, keeping the solution protected from dust.



Do not for economy's sake use too shallow a layer of solution in your floating-dish, for the reason that a small quantity is speedier exhausted than a large portion, in the ratio of 5 to 1.

Remember that if the bath is weak it dissolves the albumen from the paper, and as the shallow bath gives up its silver to the first few sheets applied to its surface, the upper layer will be weakened. But if the bath has considerable depth you may prevent this weakening by stirring up the solution after several floatings, and so keep a uniformity in the absorption.

By this means the bath does not become contaminated with particles of albumen, but remains clear, needing only a good airing when you are through with your floating. If you keep your silvering-room perfectly clean, well-ventilated and free from dust, you may leave the bath in the shallow dish to air. Of course some organic matter from the albumen paper gets in to the solution, but all you need do is to filter it through paper into a wide-mouth bottle, which must be done just before using it. Keep your floating dish clean, and after testing with the hydrometer to see if the bath is at the right degree of strength (it will be found to need dilution), add just enough water to bring it up, and if the amount of solution falls below the needed depth, add some stock prepared solution of nitrate made with the carbonate of soda and the ammonia as above.

A bath so constituted and managed may be used continually, and there will be no necessity for fusing with kaolin or of sending to the refiners.

Float the paper long enough to let the silver penetrate the albumen to the substratum of paper. This will give you a rich deposit for the gold to work on, and also prevent blisters when your prints are consigned to the hypo-bath, and it will also insure you rich, beautiful results which will not fade, even when exposed to the light for years. I have prints 20 years old made with this rich silver deposit in the albumen, which are bright and fresh-looking, indeed, much more brilliant than many of the aristo's of only a year's existence.

Never add any other nitrate to the bath than the silver nitrate.



There are many formulæ for toning which are accessible from the books and periodicals. I have used in the days that have passed the benzoate of ammonia which your correspondents speak of and have obtained some very pleasing results, but I prefer to neutralize with borax and sometimes with chalk. I always redden my prints before toning in a bath to which a small amount of acetic acid is added, then wash in clear water and tone in not too strong a gold solution only slightly alkaline.

As to the fuming with ammonia I think ten minutes will be found sufficient if strong ammonia is used, but be careful to have your paper thoroughly dry before fuming, if necessary use heat. I think the print is sometimes subjected to too much washing after it comes out of the printing frame before toning. There should be some free nitrate remaining which has not been entirely converted into silver chloride, but if there is too much free silver there will be unequal action on the print of the toning solution, mealiness and diagonal red lines.

Have by a strong solution of common salt, which may be added to the bath if you find you have not washed sufficiently. Always use a fresh hypo bath with each day's printing. Too much stress has been laid on the washing after fixing. Prolonged washing detracts from the brilliancy of the results. Rapid changing of water and constant motion of prints for an hour will remove all hypo. Pass the prints from the hypo into a strong solution of salt before putting them into the wash water.

If agreeable, in another article I shall give your readers my method with plain paper.

JESSE SUNDERLINE.

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We have received samples for trial of the Standard Gelatine Dry Plate, Lewiston, Me. We found them extremely rapid, with a fine body of emulsion, which gave a clear, brilliant negative of a gray color, with rich gradations, and in every way equal to the best work on the highest grade plates in the market. We can cordially recommend them, for gallery or out-door work.



# ON THE CHOICE OF A SUBJECT SUITABLE FOR A PHOTOGRAPHIC PICTURE.

THE choice of a suitable subject for representation by photography, of what is called a genre or composition picture, is not a particularly easy task.

From the very necessity of the case the picture must be intensely realistic, and yet it must not be commonplace, or, worse, vulgar. There must, too, be a certain amount of mystery about its conception, if we may be allowed to modestly use such a term in photography, and a mystery which does not involve obscurity, needing a label tacked on to the subject, telling us, as the rude mechanical in "Midsummer Night's Dream" told the Duke—

"This lanthorn doth the horned moon present,  
Myself, the man i' the moon doth seem to be."



CHURCH SERVICE.



We are willing to acknowledge the very narrow borders to which photography is confined in the exercise of the fancy—we will not venture to say imagination,—but we do think that the quality of suggestiveness in a limited degree is not altogether shut out of her dominion in art. But it is out of our part to go into an analysis of the nature of the imagination, yet we think that, merely out of justice to realism, we should call attention to the fact that the elements which form the creations of the poet or painter, if examined, will be found to be in themselves intensely realistic, often familiar objects or incidents.

“When forty winters shall besiege thy brow,  
And dig deep trenches in thy beauty’s field,”

says Shakespeare, and our souls thrill with the beauty of the figure, but think analytically of forty ploughings of a fair maiden’s brow, and of deep trenches being dug on her cheeks. What are those two most poetic conceptions of Shakespeare—Oberon and Titania—with all the beauty of imagery with which he clothes them, but the veriest man and wife after all?—

“Ill met by moonlight, proud Titania.”

“What, jealous Oberon. Fairies, skip hence.”

“Tarry, rash wanton. Am I not thy Lord?”

The great poets and painters, without “o’erstepping the modesty of nature,” create new scenes, call forth unexpected manifestations, and discover likenesses and differences in things which delight the imagination or touch the heart.

Shakespeare tells us his mistress’s eyes are “nothing like the sun,” and Richardson acknowledges that Clarissa’s neck was “not so white as the lace upon it, whatever poets might say if they had been called upon to describe it.”

In the commonest object, in the humblest character, we may find thoughts rich in beauty, strong in truth, and of high moral purpose.

We remember reading a paragraph in Goethe’s “Sorrows of Werther” which comes in very appropriately to show how an avowed idealist delights in the actual and commonplace things of nature.



"About a league from the town is a place called Waldheim. It is very agreeably situated on the side of a hill. From one of the paths which lead out of the village you have a view of the whole country, and there is a good old woman who sells wine



MARKET DAY.

and coffee there ; but better than all this are two lime trees before the church, which spread their branches over a little green surrounded by barns and cottages. I have seen few places more retired and peaceful. I send for a chair and a table from the old woman, and there I drink my coffee and read Homer. It was by an accident that I discovered this place one fine afternoon.



All was perfect stillness—everybody was in the fields except a little boy about four years old, who was sitting on the ground, and holding between his knees a child of about six months. He pressed it to his bosom with his little arms, which made a sort of great chair for it, and notwithstanding the vivacity which sparkled in his eyes, he sat perfectly still. Quite delighted with the scene, I sat on a plough opposite, and had great pleasure in drawing this little picture of brotherly love and tenderness. I added a bit of the hedge, the barn door, and some broken cart-wheels, without any regard to order, and in about an hour I found that I had made a drawing of great expression and very correct design, without having put in anything of my own. This confirmed me in the resolution that I had made before, only to copy nature for the future. Nature is inexhaustible, and alone forms the greatest masters."

A subject happily adapted from nature should not deprive the painter of the credit due to invention, nor should it deprive the photographer. Yet he is accused by the artist of appropriating what is not his own.

Indeed the mere faculty of inventing an incident is far more common than the nice and quick perception of that in nature which is fitted to the purposes of art, and which ordinary observers would pass by or reject as trifling or unworthy.

Among the drawings by Raphael collected by Sir Thomas Lawrence are many evidently representing scenes which actually presented themselves to him. There is one in especial showing four young men in the dress of the time, sitting at a table,—an accidental group no doubt of some of his pupils, which might readily be passed off as a copy from a photograph. The works of Michael Angelo abound in attitudes which seem, as doubtless they were, taken immediately from nature. They have that very look. And some of his figures, and some of Raphael's, and Titian's and Rubens's,—we hardly know where to stop,—look as if they had been taken with a drop-shutter.

"I am content," says George Eliot in *Adam Bede*, "to tell my simple story without trying to make things seem better than



they were, dreading nothing indeed but falsity, which, in spite of one's best efforts, there is reason to dread. Falsehood is so easy, truth so difficult. The pencil is conscious of a delightful facility in drawing a griffin—the longer the claws and the larger the wings the better; but that marvelous facility, which we mistook for genius, is apt to forsake us when we want to draw a real, un-



LITTLE RED RIDING HOOD.

exaggerated lion. Examine your words well, and you will find that, even when you have no motive to be false, it is a very hard thing to say the exact truth, even about your own immediate feelings—much harder than to say something fine about them which is not the exact truth.

“It is for this precious quality of truthfulness that I delight in many Dutch paintings which lofty-minded people despise.



"I find a source of delicious sympathy in these faithful pictures of a monotonous, homely existence, which has been the fate of so many more among my fellow-mortals than a life of pomp or of absolute indigence, of tragic suffering or of world-stirring actions.

"I turn without shrinking from cloud-borne angels, from prophets, sibyls, and heroic warriors, to an old woman bending over her flower-pot, or eating her solitary dinner while the noon-day light, softened perhaps by a screen of leaves, falls on her mob cap, and just touches the rim of her spinning-wheel and her stone jug, and all those cheap, common things which are the precious necessities of life to her, or I turn to that village wedding, kept between four brown walls, where an awkward bridegroom opens the dance with a high-shouldered, broad-faced bride, while elderly and middle-aged friends look on, with very irregular noses and lips, and probably with great pots in their hands, but with an expression of unmistakable contentment and good will.

" 'Foh,' says my idealistic friend, 'what vulgar details? What good is there in taking all these pains to give an exact likeness of old women and clowns? What a low phase of life! What clumsy, ugly people.'

"But, bless us, things may be lovable that are not altogether handsome, I hope. I am not at all sure that the majority of the human race have not been ugly, and even among those 'lords of their kind,'—the British,—squat figures, ill-shapen nostrils and dingy complexions are not striking exceptions. Yet there is a great deal of family love amongst us. I have a friend or two whose class of features is such that the Apollo curl on the summit of their brows would be decidedly trying; yet to my certain knowledge tender hearts have beaten for them, and their miniatures—flattering, but still not lovely—are kissed in secret by motherly lips.

"I have seen many an excellent matron who could never in her best days have been handsome, and yet she had a packet of yellow love letters in a private drawer, and sweet children showered kisses on her sallow cheeks. And I believe there have been



plenty of young heroes of middle stature and feeble beards, who have felt quite sure they could never love anything more insignificant than a Diana, and yet have found themselves in middle life happily settled with a wife who waddles. Yes, thank God ; human feeling is like the mighty rivers that bless the earth, it



FIVE O'CLOCK TEA.

does not wait for beauty, it flows with resistless force, and brings beauty with it.

"All honor and reverence to the divine beauty of form ! Let us cultivate it to the utmost in men, women and children,—in our gardens, in our houses ; but let us love that other beauty, too, which lies in no secret of proportion, but in the secret of deep human sympathy.



"Paint us an angel, if you can, with floating violet robe, and a face paled by the celestial light ; paint us oftener a Madonna, turning her mild face upward and opening her arms to welcome the divine glory ; but do not impose on us any æsthetic rules which shall banish from the region of art those old women scraping carrots with their work-worn hands, those heavy clowns taking a holiday in a dingy pot-house, those rounded backs and stupid weather-beaten faces that have been over the spade and done the rough work of the world, those homes with their tin pans, their brown pitchers, their rough curs, and their cluster of onions.

"In this world there are so many of these common, coarse people, who have no picturesque, sentimental wretchedness !

"It is needful we should remember their existence, else we may happen to leave them quite out of our religion and philosophy, and frame lofty theories which only fit a world of extremes.

"Therefore let art always remind us of them ; therefore let us always have men ready to give the loving pains of a life to the faithful representing of commonplace things,—men who see beauty in the commonplace things, and delight in showing how kindly the light of heaven falls on them.

"There are few prophets in the world, few sublimely beautiful women, few heroes. I cannot afford to give all my love and reverence to such varieties. I want a great deal of those feelings for my everyday fellow-men, especially for the few in the foreground of the great multitude whose faces I know, whose hands I touch, for whom I have to make way with kindly courtesy. Neither are picturesque lazzaroni or romantic criminals half so frequent as your common laborer, who gets his own bread, and eats it vulgarly but creditably with his own pocket-knife. It is more needful that I should have a fibre of sympathy connecting me with that vulgar citizen, in a vilely-assorted cravat and waistcoat, who weighs out my sugar, than with the handsomest rascal in red scarf and green feathers ; more needful that my heart should swell with loving admiration at some trait of gentle goodness in the faulty people who sit at the same hearth with me, or



in the clergyman of my parish, who is, perhaps, rather too corpulent, and in other respects is not an Obertin or a Tillotson, than at the deeds of heroes whom I shall never know except by hearsay, or at the sublimest abstract of all clerical graces that were ever conceived of by an able novelist."



SHOPPING.

But doubtless I am exercising my faculty of invention in selecting from the authors what is best suited to my purpose, so I shall return to my own commonplace. What strikes one as a good subject will appear totally uninteresting to another. "Concerning taste there is no disputing," but we know that everybody, no matter what his taste may be, is attracted by anything which affords a certain amount of surprise or unexpectedness.



When anyone looks at a painting and sees at a glance just what the maker's idea was in getting up the picture, does he rate that artist very highly? He tells you the painter's theme is too transparent. He wants to study the picture, to ponder over it, and by his own ingenuity discover something in it he did not perceive at the first glance. Now does anyone mean to say that a photograph cannot tell a story in such a way as to excite some curiosity in the onlooker?

The picture one has in his mind's eye may be translated by the camera, not as well, perhaps, as with the brush and pigments, yet with a certain amount of gracefulness and sentiment, and if one can only get the models into the spirit of the thing, the result is bound to be pleasing. But take heed, never attempt subjects transcending the limitations of photography.

We are sometimes led to believe that the models help the successful picture-making photographer more than they get credit for.

There is one consideration in beginning our search for the picturesque—not to start out to make the picture without a definite idea of what it is going to be.

It begins an "airy nothing" and never gets "a local habitation or a name." If we ourselves have no definite conception of how we intend to construct our picture-story, how can we ever inspire our patient and obliging models to act in harmony with us? No wonder they are stiff and awkward, and disgust us with their want of pliability. They may, if they catch your idea, become most valuable factors in suggesting means and entering into the spirit of it as veritable actors and not mere puppets.

Definiteness is the lever to success. A picture in which the models thoroughly enjoy themselves and the theme will have a certain amount of mystery in it which shall always make it interesting and pleasing to the beholder.

Your skill will, of course, be called forth by the introduction of something in harmony with the scene; not obtrusive, but in some way centering the interest. A distinguished art critic said he could always tell the greatness of an artist by the manner in



which he introduced a dog or a cat in the picture. With many painters puss looks as if she were indeed in a strange garret.

Now the question comes, How can this definiteness of pictorial intention be secured?

It cannot be secured at all unless the germ is in your own mind, —but we may believe Ben. Jonson when he tells us: "A good poet's made as well as born." We may be sure it is equally true of a good photographer.

There are ways of strengthening, or even embodying vague ideas. Do not smile at the exceedingly prosaic way we shall suggest: We know of no better plan than to read over a catalogue of the titles of pictures in the guide books or of collections of pictures of any kind; if nothing better can be had, an auction sale catalogue. Those of the Dutch and Flemish school of painting, the Genre painters, as they are called, will be found especially valuable. Terburg and Metsu, Gerard Dow, Peter Hooch, Jean Maes, and a host others. These painters have devoted themselves to subjects

"Not too bright and good  
For human nature's daily food,"

and photography may look at them and derive ideas therefrom and not be accused of aiming too high. After you have formed definitely in your own mind, or sketched out on paper rough drawings or sketches of what the subjects they have painted seem like to you, try to get hold of engravings, or even coarse woodcuts of their methods of treatment, and modify your sketches accordingly, but do not ever slavishly copy outright.

You will be surprised how your own thought-out ideas and the hints you get from the cuts will enable you to build up a new and delightful picture. You will get hints about arranging the draperies, the best use of accessories, etc., etc., for happily these Dutch painters of the drama of everyday life give us just such domestic scenes as we see at home. Our way of life is, of course, a little modified in costume, but needing scarcely any change in dress to make it as picturesque. Another good way to get ideas is from the caricaturist. These artists are always free from affec-



tation, and the most original of anybody. Leech, Du Maurier, Arthur Frost, are rich in fancy and highly suggestive. The pages of "Life," and "Truth," and "Puck," and the other comic papers, are fertile fields from which to draw inspiration. Thus even the most ridiculous sketch will furnish stray ideas which may be combined to the formation of a picture most serious in its intent.

After you have the name, title, or idea of what your picture shall present, a certain amount of tact is needed to build up the picture and to dispose of the various parts.

Let your models help you here also. Only gently guide them, use no forcible expressions or coercive measures, and be ready to improve on any suggestion they or chance may offer, remembering that originality, after all, is the ability of perceiving what escapes ordinary eyes.

JOHN BARTLETT.

(*To be continued.*)

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## THE MAGIC AND MYSTERY OF PHOTOGRAPHY.\*

BY J. A. RANDALL.

WHITE LIGHT FOR DEVELOPING.—The first fifty years of dry-plate photography will probably be known as the dark ages, when the photographer was forced to grope about under a deep red light; the man of the twentieth century, developing his plate in a soft white light with ease and comfort, will look back with pitying contempt on the man of the nineteenth with his glimmer of ruby light. Abney once propounded the query, "How would you develop a plate in white light?" I gave it up, and Abney evincing no willingness to satisfy the curiosity aroused in me, I forthwith dived into my "Instruction" and "Treatise," looked up "Cantor Lectures," searched "Phil. Trans." (100 vols.), hunted through back volumes of photographic journals, but not a hint of white light for develop-

\* Portions of this article were published unintentionally without credit to author or source.—ED.



ing could I find. Began to suspect Abney of frivolity. At last I remembered that Abney had produced a whitish light by a mixture of the yellow and blue of a spectrum, and that silver chloride and silver iodide, being only slightly sensitive to blue rays and those above yellow and blue, as well as red and green light, might be admitted whilst developing them. Given, therefore, a silver chloride or iodide highly sensitive to a monochromatic light, or a developer much more energetic than those now in use, it would become practicable to use such films for ordinary work and develop them in a whitish light. It is worth consideration if such a monochromatic plate would not fulfil all the requirements of ordinary photography, wherein color-rendering is not of great importance. Of course a salt highly sensitive to the yellow would be the ideal, in order that the luminosity-sensitiveness of the eye and the plate should correspond. But Abney has recently shown that behind all color is luminosity, or a light that is colorless, and it is therefore not unlikely that a sensitive film could be found capable of receiving impressions in luminosity rather than color.

**A PHANTOM PICTURE.**—Put a sheet of ground glass behind a portrait negative and place it against a window strongly lighted. Darken all the panes except the one against which the negative is placed then look steadily at one point of the negative for about half a minute. On then directing the eyes towards the dimly illuminated ceiling of the room, a beautiful positive of a rich sepia will be seen. By this simple method a likeness can be recognized by those who are not practised in examining negatives.

**DOUBLES.**—Doubles, or two positions of the same person on one picture—such as a man playing chess or shaking hands with himself—are made in the same way as “freaks.” Many other curiosities can be secured if, instead of dividing the exposure shutter vertically, it is divided diagonally or otherwise to suit the subject. In this manner we may obtain “a little child sleeping on a chair while her spirit is soaring away in a vision



of happiness" in the upper part of the picture ; a painter with the subject at his side and also on the easel; and many extraordinary feats of jugglers and tumblers. Three portraits in the same picture can also be made by dividing the shutter into as many parts and adjusting it with great care. Some years ago a picture of this kind represented three portraits of a little girl; two were holding out a sheet of plate glass, and the third was standing upon it. Many such strange combinations are possible by the exercise of a little ingenuity. A very simple plan of making doubles is to use a black cloth as a background, to take the subject on one-half of the plate in the first position, and on the other half in the second, the little light reflected from the black cloth in the second exposure having no effect on the first impression already on the plate. A man conversing, boxing, etc., with himself, or both batting and bowling may be had by this simple expedient.

**THE STAMP PORTRAIT.**—The stamp portrait—that is, a postage stamp copied and the head replaced by another portrait—can be achieved by this process. First copy the stamp to the required size, either blocking-out the crowned head on the original or in the negative. Then print an oval of the portrait wanted to fit into the vacant space on the stamp, paint it over with gamboge, and print the stamp border around it as usual. The print so obtained may again be copied, or duplicates made by the same process. Select foreign stamps for imitation, print them by a color process, and mount them on cards after the manner of the specimens in the British Museum.

**TRICKS IN PRINTING.**—Various startling appearances can be created by applications of combination printing. To make them a process of masking is generally adopted; but I will explain another dodge, much simpler, and if done well capable of giving a better result, especially with small work. Specimens of combination printing made by this process were at one time hawked about in the trade; two guineas were asked for the secret, and some photographers were so struck by the specimens that they



willingly paid the price. The process is best adapted to albumen paper, and consists in simply painting upon the surface of the albumen with a water color, such as gamboge or some other non-actinic color. For example, supposing the only surviving portrait of a defunct person is wanted surrounded by a wreath for a memorial card. The wreath is photographed to the desired size, and the head of the portrait copied to fit within the wreath. Next the head is masked, printed upon the sheet of paper, and when taken from the printing frame painted over with the gamboge. This operation must be done in a weak light, care being taken that the paint covers the figure and yet does not encroach upon the white ground. When dry the paper is adjusted to the wreath negative printed. In washing the paint comes off, leaving the portrait surrounded by the wreath, and no trace of an outline to be seen. This process is too tedious for large work, but it cannot be improved upon for small work when a mask and disc are difficult to manipulate.

A SIMPLE TRICK.—Photograph the back of a person, either head or shoulders or full length, showing not a trace of the face. Take a print from the negative and paste it on a card in the usual way. Upon the back of the mount paste a full face portrait of the same person to match the other. Nine persons out of every dozen to whom the back view is presented will reverse the card to look for the face; the regularity with which this is done becomes very amusing after a time to those in the secret.

DECAPITATION—"The Horrible Headless Horseman."—A sickly feeling creeps over the person who is shown the portrait of an upright headless body and the feeling is not diminished when it is seen that the missing head is under the figure's arm, is stood realism is easily reproduced by combination printing. Two negatives are required, one of the figure's head, the other of the figure without the head. The head can be removed either by interposing a screen between the subject and lens during exposure, or by masking out in the printing and putting in a new



background. The head alone is then printed on the paper near the position it is to occupy in the finished print; it is painted over as directed above and brought under the full-length negative in any desired position—under the arm, on the table, or flying away from the shoulders—and when printed and washed it of course appears in one or the other of these odd positions. It is said that in some military towns certain photographers keep stock negatives of smart horse regiments, and any ungainly linesman or recruit, by having a small head taken in the studio, will be supplied with a portrait of himself of large size, in full dress, of noble figure, and mounted on a fiery charger, with which he can astonish the natives when he returns home.

A PREHISTORIC KINETOSCOPE.—Take two negatives of a person performing any energetic action, one at the commencement and one at the finish of the operation. A man pumping water, sawing wood, or driving a nail will do. Mount a print from each negative upon a circular piece of stout cardboard, one on either side, in reversed positions like the impressions on a coin. Attach a length of string to each side of the cardboard in the line of the diameter. Then rapidly twirl the card by means of the string and it will appear that the two images combine and the man works most energetically.

In concluding these articles I am conscious of having led the reader a somewhat erratic course. This was partly necessitated by the nature of my subject and partly by a desire—in the words of one who professed a passion for photography—"to sow the seeds of a few agitating mysteries that you feel you must solve."

*Photo. News.*

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The Bausch & Lomb Optical Company celebrate the twelfth year of their production of photographic lenses by the extension of their Photographic Lens Department, the new addition covering 8,000 feet of space and providing facilities which the rapid increase in the demand for their lenses has made imperative.



## PHOTOGRAPHY BY THE ROENTGEN RAYS\*

IT has been frequently stated that the visible fluorescence of a tube is not a guide to its working power, but in my experience I must contradict this. I find that I can always tell how many tubes are working by noting the visible amount of fluorescence ; and, moreover, the very best tubes that I have, fluoresce almost as well (if not so regularly), when the current is reversed, as when it is passing in the right direction ; many tubes cease to fluoresce almost entirely as soon as the current is reversed, but a very good tube will fluoresce whichever way the current is going.

I at one time imagined that the intensity of the X-rays ran in direct ratio with the number of breaks made by the contact-breaker, and spent much time in devising an arrangement which would give me more rapid breaks. I now find that a certain but variable number yield the best results (at any rate from a photographic point of view). The number varies considerably with the state of the tube, and I find that best suited for my purpose by noting the amount of fluorescence.

I have made a series of experiments with the object of ascertaining the penetrability of various metals, but, owing to the extreme difficulty of obtaining the various metals in sheets of the same thickness, I have been seriously handicapped. Sheets have been chosen as nearly as possible of the same decimal gauge, and, although it has, so far, been impossible to obtain accurate measurements, they may be roughly placed in the following order :

List of metals, placed in order of the resistance they offer to the passage of the X-rays : Aluminium, steel, zinc, tin, copper, nickel, brass, platinum, lead, and silver.

The brass in the list was composed of copper, 63 per cent. ; zinc, 37 per cent., with slight impurities, in all about .03 per cent. The thickness of the sheets used was as near as possible 4 metal gauge, or .012 decimal gauge.

The order in which the above list of metals is placed is only

\* Extracts from a paper read before the Royal Photographic Society of Great Britain. By Hall Edwards, L. R. C. P.—Transactions of the Royal Society.—From the *Photographic Journal*, January 12, 1897.



approximately correct, and it will be necessary to make accurate measurements before an absolutely correct list can be drawn up ; it is, nevertheless, sufficiently near the mark for all practical purposes.

During the progress of my experiments upon metals, I have noted an interesting point which I have not seen mentioned. It is a well-recognized fact that variations in thickness can be radiographed, and it is quite possible (using great care) to obtain a mixed image of the two sides of a coin. But this is not all ; for, if a sheet of metal be dented, even so slightly as not to render one part thinner than another, this indentation can be pictured. If a radiograph be taken through the metal covering from the top of a bottle of pyrogalllic acid, for instance, the lettering and trade mark will stand out as plainly as if it were photographed in the ordinary way, with a camera and lens. I first thought that this phenomena was due to the fact that, in the process of pressing up the image, the metal was considerably thinned in certain parts. I disproved this theory in the following way. A small piece of thin foil (a mixture of tin and lead) was pressed down upon a medal with the ball of the thumb, not sufficient force being exerted to stretch and thin the metal. I succeeded in radiographing the raised image with ease, and, on carrying out this method with care, I find I can obtain an image of any medal I may desire to copy. I then came to the conclusion that the production of the image was due to the varying distances of the surface of the pressed metal from the photographic plate. This theory I still hold, although it is just possible that the phenomenon may be due to an entirely different cause.

To try and ascertain the truth of the matter, I took two small pieces of sheet lead, about one-fortieth of an inch in thickness. These I lightly pressed upon a brass ring, so as to slightly raise a ring on each piece. I now placed both pieces upon a covered plate. One I placed with the raised ring towards the plate, the other with the raised surface toward the tube. On examination of the negative I failed to find any difference between the two images, and, had they not been marked, I could not have told one



from the other, although in both instances the rings were perfectly distinct.

A brief consideration of the various theories put forward to account for the phenomena produced by the X-rays may prove of interest, and further may suggest a line of investigation to workers in this interesting branch of research. In the investigation of a subject of such absorbing interest (which is open to all who care to trouble themselves in the matter), it is only natural that much should be said (on the spur of the moment) which is found to be incorrect in the course of time.

All communications from untrained experimenters should be taken *cum grano salis*. It is a very simple matter to jump at conclusions, but it is quite another thing to substantiate and make self-evident the premises from which such conclusions were obtained.

Of the various theories put forward to account for the phenomena under discussion, not one is sufficiently backed up by facts to give even the most slender grounds for its acceptance. Very many facts will yet have to be revealed before it will even be safe to jump at a conclusion without risk of missing your footing.

We have at present at least three theories which are worthy of consideration, and to very briefly discuss the "pros" and "cons" of each (even in the light of our at present limited knowledge) may not be a waste of time.

The theories in question are :—

The Electrical.

The Fluorescent.

Ultra-violet light.

In favor of the electrical theory we have the facts that, without electrical energy the phenomena cannot be produced, and that the intensity of the X-rays runs in direct ratio with the amount of electrical energy used, granted, of course, that the tube is constructed to carry the current. The experiments of Hertz have also proved that electrical waves can be transmitted to a distance through solid bodies. On the other hand, we find that without a tube capable of producing the other phenomena which have



been described by Crookes as being those of Radiant Matter, no photographic results can be obtained. We have, therefore, two factors which are absolutely necessary before the phenomena can be produced. Again, no matter what amount of electrical energy be passed through the tube, the vacuum of which has fallen below the point when the phenomena of Radiant Matter are exhibited, no photographic or fluorescent results can be produced. It appears to me that this fact alone is sufficient in itself to negative the electrical theory.

With the limited knowledge already at our disposal we consider that electrical energy is an absolute factor in the production of the phenomena, but if we are to judge from analogy, there is every reason to believe that given a Crookes tube, there is no reason why some other form of energy should not be capable of producing similar results. It is a well-known fact that a ray of light falling upon a Crookes tube is capable of setting the molecules contained therein in motion, and that some of the phenomena of Radiant Matter can be observed under such conditions; the movement of the vanes in the radiometer when the instrument is placed in the light is an example of the effect of another form of energy from Radiant Matter. Now is it not possible that X-rays may be produced by passing an intermittent ray of sun or other light through a Crookes tube? Anyhow we have not at present proved beyond all power of contradiction that electrical energy is an absolute necessity, therefore to found a theory is, to say the least, premature.

In order to see whether a ray of light passed through a tube would produce the X-rays, I bored a hole in the shutter of my dark room, and allowed a ray of sunshine to pass through the tube for several hours, and also a ray of light to pass through for the remainder of the day. At the other side of the tube, at the usual distance, I placed a plate enclosed in black paper with a metal disc upon the top, such disc being turned up edge-ways, so that no pressure should be exerted, but the result upon development was absolutely nil. It then occurred to me that perhaps an intermittent ray would produce some result, and I rigged up



a clockwork arrangement by means of which a disc with a hole in it was made to revolve in front of the hole in the shutter, but still there was no effect. At the same time, I have not entirely given the matter up, but I have been so busy in other directions that I have not been able to continue my experiments.

That electrical energy without the aid of a Crookes tube, is incapable of producing the phenomena which can be produced by means of the X-rays, has been proved, hence to ascribe to electricity the production of the phenomena without further evidence is unscientific. The main factor is undoubtedly the presence of Radiant Matter, and it therefore follows that the phenomena is one of the properties of such matter when set in motion by suitable means.

Up to the discovery of Prof. Roentgen, Crookes tubes were looked upon as little better than interesting toys, but it must not be forgotten that it was predicted that the phenomena exhibited is quite capable of being applied to useful purposes, and in all probability Roentgen's discovery, wonderful as it is, is only the first link in a chain which may prove of immense length.

Although it is impossible at present to say with certainty that the electrical theory is the wrong one, there is every probability that this may be the case.

*The Fluorescent Theory.*—It has long been established that the production of fluorescence is one of the properties of Radiant Matter when set in motion, and it was whilst investigating this phenomenon that Prof. Roentgen discovered the action of the X-rays upon a photographic plate.

We have so far very little evidence that the change in the film is due to fluorescence entirely, for although we know that a dry plate can be acted upon by a fluorescent surface, there are many points which appear to disprove that this alone is the cause of the photographic action; some of these I have already discussed, and although again it has been pointed out that photographic plates fluoresce when brought within the range of the X-rays (a phenomena I have not myself noted), I am inclined to look upon it as only one of the phenomena, and not the direct cause of the effect.



The fact that negatives can be produced upon bromide paper is additional evidence that the fluorescence of the support does not make any material difference to the result.

Supposing that the result is due to the fluorescence of the silver bromide, or the gelatine, and knowing that radiographs can be produced a dozen or more at a time upon superimposed sheets of bromide paper ; we should naturally expect that the silver would be deposited equally throughout the thickness of the film—this I have already proved not to be the case, and the fact somewhat discountenances the theory that the result is due to the fluorescence of the film itself.

On weighing equally the "pros" and "cons" of the case, the only just conclusion we can arrive at is that the fluorescence of the film, or its support, is but a secondary phenomenon, and not the direct cause of the effect.

*The Phenomena due to Ultra-Violet Light.*—In many respects the phenomena exhibited by the X-rays simulate those produced by ultra-violet rays ; but they differ from them in many important respects, not the least being that substances which are most transparent to the X-rays are the most opaque to what has been called dark light. Take black paper as an example.

It hardly comes within the province of my paper to enter into a lengthy discussion upon these and various other theories which have been brought forward, and I have only briefly alluded to them with the object of showing that as a matter of fact we are perfectly ignorant of the causes of the phenomena.

That we have placed in our hands a new force, of great power, is certain, but we are quite unable at present to even guess at its ultimate usefulness, even to the photographer. Further, the discovery appears to have allowed us a peep over that shadowy borderland where matter and force merge into one.

That every effect must have its cause we all know, but should we be right in assuming that every cause must produce some effect ? I think we should ; for although in many instances the effects are so small, and the causes so subtle, our knowledge is so incomplete, and we have no instruments to measure them—



I think, all the same, that scientists will be ready to admit, that every cause must produce some effect. In the papers some time ago I saw that Mr. Edison was going to win a prize of some thousands of dollars for giving a gentleman back his sight by means of the X-rays. I do not believe Mr. Edison ever undertook to do anything of the kind ; for as the X-rays seem to have no effect whatever upon the healthy optic nerve, I do not think it is very likely that they will have any effect upon a diseased one. Knowing the fact that the rays will pass through the head, it struck me that there might be some central organ which might be able to appreciate them. I had seen it stated in the papers that the optic nerve could do so, and I therefore tried some experiments upon myself—again with negative results. I sat, completely blindfolded, before a Crookes tube, whilst my assistant held close to different parts of my head various shaped pieces of thick lead. I could not, however, tell what was there, or even guess the shape of the object held between my head and the tube. I was a little disappointed, because I had hoped that in some extraordinary way I might have been able to tell which particular piece of metal was being placed in the path of the rays.

We have heard much about the effect of the X-rays upon the skin ; this I think must be due to some idiosyncrasy of the operators, for although I have myself been experimenting daily for the past eleven months, I have failed to notice anything of the kind.

The advances which have been made in the application of the X-rays are, for the most part, purely medical. To the surgeon the improvements in tubes, and in technical details, have been a distinct advantage, and he is now able to take very much better photographs, and through thicker parts than was possible some time ago. I should like here to show a photograph which was very successful, and which is very interesting, inasmuch as the child (if he grows to be a man) will have to say that his life was given to him by means of the X-rays. It is a radiograph through the chest of a child a year and nine months old. The child swallowed a sovereign (or was thought to have done so), and was



taken to a medical man, who saw no symptoms that the sovereign was present. A month afterwards the child was brought to me, but I found no symptoms, and advised the parents to wait and see if any occurred ; soon afterwards it had a slight attack of bronchitis, and there was distinct evidence of some pressure upon the trachea. By means of a fluorescent screen—a better one than I had when the child was first brought to me—I could see distinctly there was something in the chest, and, having persuaded an operating surgeon that such was the case, the patient was given chloroform and after an exposure of seven minutes this photograph was obtained. (Print shown, in which the image of a circular body was very clearly visible.) Several similar photographs to this have been published in the medical papers, but in these cases the coins could all have been removed without the aid of the X-rays ; in this case, when the child was under chloroform an instrument was passed into the œsophagus but failed to touch the sovereign, and the child had to undergo the very severe operation of œsophagotomy, and is now perfectly well. It is a record case from a surgical point of view, because it is the youngest child which has ever recovered from this severe operation.

One point that medical men desired should be cleared up by means of the X-rays is still as dark as ever. It was hoped that we should be able to photograph stone in the kidney, and the reasons for our not being able to do so are, to a great extent, photographic. The further away an object from the plate, the more indistinct its image becomes ; and it is curious, that, even when an object is placed a little distance from the plate the image cast (by a coin) seems to be fogged. (Negative shown to illustrate this point.) I ask any of you who are experimenting to see if some method cannot be devised by which this difficulty can be got over ; if you find such a method you will make a very distinct advance, and will do a considerable amount of good for your fellow-creatures, because I am certain that stone in the kidney can be photographed if this one difficulty can be overcome.

At the conclusion of the paper Dr. Hall-Edwards exhibited a



series of lantern slides. Two of the slides showed the necessity of taking radiographs of a fractured limb, from more than one point of view, as the direction of the fracture or the position of a foreign body might not be visible from the point of view first chosen. He remarked that iodoform was the most opaque substance he had yet examined. In connection with a slide showing a needle in a hand, he said the position of foreign bodies could be to a great extent determined by their relative degree of sharpness when viewed from different points, the want of definition increasing with the distance of the object from the plate.

Mr. A. W. Isenthal, referring to Dr. Hall-Edwards' remarks as to the opacity of the fluorescent salts, and especially of platino-cyanide of barium, said he had tried the very simple experiment of placing several thickly coated fluorescent screens one behind the other at distances of about eight inches, and allowing the rays to pass through them. He found that using only comparatively small electrical energy, with a spark of from three and a half to four inches, he was able to get a very distinct shadow on the fourth screen, which appeared to him to indicate that platino-cyanide of barium was less opaque than had been suggested in the paper. With regard to the fluorescence of the tube being taken as a criterion of the amount of the exposure to be given when using the tube with a photographic plate, he had lately been using some tubes which fluoresced excellently, and with which he had been able to clearly discern on the screen some of the deeply seated structures of the body, but the same tubes utterly failed to yield satisfactory results on photographic plates. This would confirm what Dr. Hall-Edwards had said as to some plates showing a very dense deposit on those parts which had only been covered with the envelope, and failing to give any details of the thicker parts of the hand. He had often taken a tube with which he had been able to see the knee-joint of an adult at a distance of about two yards for the tube, and exposed an ordinary hand for five minutes on a very rapid plate, and the resulting negative had been very unsatisfactory, although the tube had fluoresced brilliantly and steadily throughout the exposure.



Mr. Wilson Noble said it appeared to him that if Dr. Hall-Edwards wanted a fluorescent screen which should be transparent he was expecting the impossible, because a screen to be fluorescent must of necessity retard the rays in order to produce fluorescence. Fluorescence was probably due to molecular change in the substance, and if the rays attacking the screen were utilized in producing the fluorescence, obviously they could not get through the screen ; it therefore seemed to him that a fluorescent screen must be opaque and that a transparent screen could not be fluorescent. With regard to the fluorescence of tubes, there was undoubtedly very great difference between one tube and another, and also in the action of a particular tube at different times. It had been a matter of great difficulty to him to ascertain what was the cause of the varying appearance of the tubes from time to time : he did not quite understand what Dr. Hall-Edwards meant when he referred to different kinds of rays issuing from a tube—he presumed they were all the same rays, in the same way as red rays were similar to violet rays. He had held his hand to a screen, and the whole of it—bones and flesh alike—had been nearly transparent, and had then taken his hand and the screen further away from the tube until there was practically no illumination at all, showing that the transparency was not due to an excess of light, if he might use the term, but that for some reason the bones and the flesh were equally transparent. As far as he was able to judge, when a tube was showing a kind of ground glass fluorescence the effect was to make the bones very much more transparent than when the tube was showing a brilliant apple green fluorescence. He had had no difficulty in photographing through the thickest parts of the body, but a short time ago a case occurred which puzzled him very much. A boy, of about fifteen years of age, was brought to him by a doctor to be radiographed for hip disease, but although he tried several exposures up to thirty minutes, he found it absolutely impossible to get any detail whatever in the bone, which was apparently as transparent as the flesh ; there was no doubt that the rays passed through the boy's body, because the iron splints which



he was wearing showed distinctly on the plate. The Penetrator tube was excellent when new, but for some reason it seemed to go off, and it was almost impossible to make it recover itself by heating in the ordinary way.

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#### ELECTRIC LIGHT LAMPS FOR MAGIC LANTERNS.

For a long time magic lantern operators have been trying to adapt the electric light to the purposes of projecting views on photographic slides upon the screen, but the expense, together with the inconvenience in handling the light, as well as its too great intensity, have been the principal drawbacks to its introduction. Recently Mr. Arthur W. Yale, of Philadelphia, has devised a new form of the arc light lamp which is simple in structure, easily managed, giving a uniform, powerful, yet at the same time soft illumination with the minimum amount of heat.

In order to secure this quality of illumination, the carbons are enclosed in an encasement which is practically void of oxygen, thus preventing their consumption, and are so arranged that they can be adjusted by means of a simple device, requiring less attention than the operating of a calcium light, and giving much greater illumination.

The bottom carbon burns away about one-thirtieth (1-30) of an inch per hour, hence it is only necessary to feed the upper carbon. This carbon can be *instantly* brought in contact with the lower carbon and instantly raised, at the same time the most minute adjustment of the arc can be made, a result heretofore unattained.

The lamp can be "set" at any angle, and will fit any lantern, set-screws or posts being unnecessary on account of the heavy base. The oil lamp or the calcium jet need simply be removed and the arc light set in its place.

This lamp consumes less amperes than any other arc lamp, hence it is cheaper to operate, yet the candle power is nearly as high as the most powerful "open arc incandescent" lamp on account of the high voltage. This lamp can be seen at any time at the photographic establishment of Wm. H. Rau, cor. Juniper and Chestnut streets. Patent applied for.

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"Ray Filter Photography," beautifully illustrated with half-tone etchings of cloud and landscape "Rayfiltergraphs" and distributed by the Bausch & Lomb Optical Co., Rochester, N. Y., gratis, is one of the most pleasing and instructive booklets of the year. Everyone interested in photography should write for a copy.



**The Journal** of the Royal Photographic Society of Great Britain contains the paper read by W. Gamble on "The History of the Half-tone Dot." After briefly reviewing the earlier methods for producing a grain, the author enters upon the proper scope of his paper, the methods employed for breaking up the tones of the original by interposition of screens in making the negative plate; however not limiting the term screen to that of any particular form or pattern, but giving it a more generic signification, the principle being identical in them all, whether gauze, ruled lines, or stipple, nor is he specific in their mode of application.

The author shows that a print from a negative on a zinc plate in ink, without the interposition of a screen, gives no half-tones, merely high lights and deep shadows of the original. Hence the necessity of breaking up the image so as to produce a stipple of varying size for the reception in varying degree of the printers' ink.

The author gives the credit for the inception of half-tones to Fox Talbot, 1852, who employed muslin, crape, Brussels net, etc., interposed between the cliché and the sensitive surface. Mr. Gamble calls special attention to the fact that Fox Talbot speaks in his patent, of "a glass plate covered with fine, opaque lines,"—the modern line screen—Talbot, however, it seems, did not make practical application of the ruled screen, but preferred a plate to which a grain was given by dusting on some powdered material, or by interposing between the plate and the light a layer of fine black gauze, single or double fold. This latter method has the disadvantage for relief etching purposes that the high lights are rendered without dots, forming a hard edge from light to dark.

Mr. Gamble's attempts at the employment of the gauze in the camera was beset with many difficulties by reason of the lack of the information we now possess about half-tones. The influence of the diaphragm was not then considered. In his recent trials with a gauze screen; according to present day methods, placing the gauze between two glass plates and setting it at a suitable distance from the sensitive plate, just as a ruled screen, using a square stop, he found it acted similarly, but the network was faulty.

The next step in the history of the dot is the use of mechanically ruled lines. C. J. Burnett, in 1858, suggested screens of crossed or uncrossed ruled lines or random dots on glass. The single line screen first claims our attention because it was the first in use. It is difficult to give credit to the first user. At that time lithographers were accustomed to use, as they do now, mechanically ruled lines for the purpose of imparting a tint on the stone or copper plate. Sometimes the lines were engraved direct on the stone, sometimes they were ruled on copper and transferred to



stone. Naturally the experimenter in half-tone seized upon this very likely means of obtaining his screen, or "tint" as it was very often called in the early days of the process—a word which at once indicated its origin. We can well imagine that a proof from such a tint-plate was made the means of securing a screen by photography on glass, and this in fact was the way line screens were made for a long time. There is also a very natural reason for using single lines, and that was the difficulty of securing cross lines. Not only was it difficult and expensive to rule a large copper plate perfectly in cross lines, but there was the fact that if you make a negative from a proof of a cross line tint you get, not cross lines, but checkers, so that in order to get the cross line screen a positive would have to be made from the negative plate. Now the operator knew perfectly well it was difficult enough to get the one plate perfect, but to copy it again was enough to turn his hair gray. Incidentally it may be mentioned that there were no anastigmat lenses in those days, and it was no easy task to render the crossed lines equally sharp. It was also believed that a cross line did not give such a good result owing to cutting off so much light from the plate.

It was probably for such reasons as these that attempts to make and use cross line screens were abandoned for many years, and the whole efforts of experimenters were concentrated on single line screens.

Berchtold in 1859 suggested using line screens for his process, but the earliest record I can find of the making and using of such screens systematically is by Baron F. W. von Eggloffstein, who was pursuing experiments for accomplishing heliographic engraving on steel for intaglio printing in 1861, in Philadelphia. Sufficient evidence has been given that he was making experiments at this early date, but he did not take out a patent and publish results until November 21st, 1865, in the United States.

Eggloffstein's screen consisted of a highly polished plate-glass covered with a good asphaltum etching ground, heated and smoked over a wax taper in the manner of the engraver's black etching ground. When cooled the plate was ruled over with a diamond or other point in a ruling machine in one direction only. The method of using this screen was to expose a bitumen coated plate to the action of the light through the screen, and then to the photographic image by a second exposure to light. Both images were thus blended into one, the screen giving texture to the photographic image. The parts not acted on by light were then dissolved out, and the bare steel etched with acid to produce an intaglio printing surface. It is a curious fact that these early screens were ruled with from 200 to 500 lines to the inch, which is much finer than the finest in use to-day. To the extreme fineness of the rulings the failure of the process was probably due.

It has been stated that Messrs. Bullock invented the method of shifting



the screen during exposure—that is to say, turning it 45 degrees in order to secure a cross line—but I can find no mention of it in their specification, and as a matter of fact it was suggested by Berchtold. So far as available evidence goes, this idea, so far as negative making is concerned, should be conceded to J. W. Swan, whose patent is dated 1879. Meisenbach patented practically the same idea three years later.

Swan was trying to turn to account the idea already known to many photographers that if heat be applied to a gelatino-bromide plate which has been developed, fixed, and rendered surface dry, the image will stand out from the plate in more or less bold relief. To obtain stipple effects for pictures possessing half-tones, he used screens consisting of transparent fine lines, about 100 to the inch, ruled on an opaque ground. Such a screen may be placed before the sensitive plate in the camera, while the negative was being taken, or it could be used in contact with the transparency to be copied, or in printing by introducing the screen as a film between the negative and the sensitive plate. In either case it was, according to Swan's process, moved periodically at different intervals during the exposure, so that a stronger impression of the lines, and a greater number of crossings is obtained in the shadows than in the lights or vice versa, if a transparent positive is used. Different sorts of screens may be used even on the same picture and (continued this description) such photographs may be used as negatives by transmitted light, for producing reliefs by the process already described, as by the application of moist heat, or by the chromated gelatine method. Or such linear photographs may be used in photo-etching processes. Swan not only suggested the use of the single line screen, and the turning of the screen, for his own process, but he also suggested it as a negative process to be applied to chromated gelatine on zinc, copper, etc.

I don't think there can be any doubt, from this description, but that Swan ante-dated Meisenbach by three years in the process commonly ascribed to Meisenbach.

However, Meisenbach paved the way to the commercial success of the half-tone process, and stimulated other firms to renew experiments which had for some time fallen flat. There were several zinc etching firms in London at that time, but none paid any attention to the rising process of half-tone. Gradually the Meisenbach specimens began to make their mark, and the older process firms saw that they must be moving with the times.

Meisenbach's patent stated that a transparent plate is hatched or stippled, and is placed face to face with the transparent positive. The hatched plate may be moved one or more times during the taking of the negative, to obtain cross hatched or broken shading. This negative is transferred in the usual manner on to a plate of suitable material (*i.e.*, bitumen sensitized zinc) which is etched to form a typographic block.



I do not think Meisenbach secured a patent either in France or America. At any rate process engravers in those countries began to vigorously experiment with the method, patent or no patent, with the result that so far as America was concerned, a much better process was evolved.

We must now turn to America for the further progress in half-tone, and this part of its history is by far the most important. But before doing so I must hark back a little to the later seventies to refer to experiments with the Woodbury relief. Woodbury himself experimented with gauze, but the most practical application of Woodburytype to process block making was by F. E. Ives, in 1878. As I understand it, Mr. Ives made a Woodbury relief and from this a plaster cast. The relief was inked with a good black ink, and an elastic sheet consisting of a pyramidal raised grain was pressed into contact with the inked relief, and according to the height of the different parts of the latter the elastic grain received more or less ink in different parts. For example, in the shadows it received most ink, the pyramids being "squashed" together, whilst in the high lights the ink just touched the points. The inked elastic sheet was then pressed into contact with the white plaster cast and left it stippled all over with dots of different gradation. The cast was then photographed and the negative used for making an etched relief block in the usual way.

Mr. Ives, however, appears to have soon turned his attention to making negatives with ruled screens, and in 1886 he had introduced sealed ruled cross line screens, and had discovered that a square diaphragm gave a better result than a round one in connection with these screens. In May, 1888, he described in the *Journal of the Franklin Institute*, the optical principles involved in the process though the reference was brief, and Mr. Ives' method did not become generally known until some years later.

Meanwhile numerous attempts had been made both in Europe and America to produce more perfect screens, and it was felt that in this lay the greatest hope of the process. Further it was believed that these screens must be ruled on to the glass direct. Wolfe, of Dayton, Ohio, was, I think, the first to introduce a good commercial screen, but he made them by ruling an original plate direct and copying from this on dry collodion plates by contact probably. These screens were wonderfully clear compared with what had been available hitherto. He at first introduced single line screens unsealed, but afterwards brought out sealed cross lines, such as he now supplies. For the benefit of those who have not handled one of these screens, I pass round an example so that you may see how wonderfully clear, sharp, and dense the lines are, considering that they are copies.

In 1893, Max Levy patented engraved line screens, and his invention was epoch-marking in the history of half-tone. These screens, as most of you are aware, differed from all previously existing screens in the fact



that the lines were etched into the glass, and then filled with opaque pigment. In that respect the patent is claimed, and I think is deserved by the amount of labor Mr. Levy put into the work of perfecting his idea. These screens are now universally used by half-tone workers, and it is upon their results that so much has been written in the past two or three years concerning the theory and practice of half-tone work.

(To be continued.)

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#### "THE CHAUTAUQUA IDEA."

How to accomplish the greatest amount of good in the best possible way.

In order to encourage competition, and to obtain a thoroughly representative exhibition of photographic work, it has been decided that the territory covered by the P. A. of A., be divided into four sections, the same as last year, the divisions to be known as the Eastern, Western, Middle, and Southern. Each division will have a separate set of prizes in all classes, and the winning exhibits of the first prize in Genre and A classes in each of these respective divisions, will be at once entered to compete for a "Grand Portrait" and "Grand Genre" prize.

The Eastern division to consist of the following states :—Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, Maryland, District of Columbia, New Jersey, and the Dominion of Canada.

Western Division :—Washington, Oregon, Minnesota, California, Idaho, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, Nebraska, Kansas, Missouri, Indian Territory, Texas, North Dakota, South Dakota, Nevada, and Oklahoma.

Southern Division :—Arkansas, Louisiana, Mississippi, Alabama, Virginia, West Virginia, Delaware, Tennessee, Kentucky, North Carolina, Florida, and Georgia.

Middle Division :—Wisconsin, Iowa, Michigan, Illinois, Indiana, and Ohio.

Members of the P. A. of A. to compete in their respective divisions. The first prize winners of Genre Class in each division to compete for a grand prize to consist of an article seventy-five dollars in value. The first prize winners of each division in class A to compete for a grand prize to consist of a life membership in the P. A. of A.

The exhibits winning the grand prize in the Genre and A classes to become the property of the Association, for the purpose of forming a permanent exhibit.

This plan affords the possibility of a member's work meeting with a just award by virtue of competition with the fellow fraternity of his own



section of country, without interference with the work made by members in foreign territory with whom they do not compete or meet in their regular business relations.

In addition to this it encourages all sections of the country to competition and progress, inasmuch as the grand portrait and grand Genre prize are awarded by a competent selection of the best work culled from only the first prize winners of the various divisions of territory, and gives each section equal chance in winning the two grand prizes.

The committee have secured a competent artist, and an expert chemist, to give us a lecture on Art and Chemistry, respectively; which will be appreciated by the fraternity as a right step in the right direction.

The association desires every photographer in the country to encourage the association by becoming a member. A list of which will be published for distribution at the convention, and all those employers and employees who send their initiation fees and dues to G. W. Varney, 3937 Drexel Boulevard, Chicago, Illinois, before June first, will have their names published among the list of members. The secretary has applications on file for copies of the names of leading photographers in the United States, from publishers and others who want photographs for publication, and will pay for the same. It will be an advantage for every photographer to be on this list.

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#### ABOUT FLOWER PHOTOGRAPHY.

MR. EDITOR: That is an interesting paper on "Flower Photography," published in your April number, and the one by yourself read at the Photographic Society has some very excellent suggestions. Flowers are my favorite, and I think the title *Portraiture* is a just one, because they really do require as much humoring as a child to get the best expression. If I may use the term. Nothing is more unpleasant than harshness, and softness cannot be obtained but with a subdued light, which necessitates long exposure and consequent languor on the part of our delicate subjects. That is a good idea suggested of photographing against the light. It gives a wonderful transparency and softness of finish, which is not unlike the effect we see in paintings of flowers. I always use orthochromatic plates, and by the way, I have caught a hint from one of the other contributors to your magazine on photographing lace, and applied it to my pet hobby.

The writer speaks of the beautiful effect of relief obtained by direct side light, and exclusion altogether of top light.

Now it occurred to me that many varieties of flowers are akin in structure to fine lace. Why not adopt the same method of illumination, and support the shadowed side with judicious reflexion by means of paper



screens. I was truly delighted with my results. I think you will agree with me, but if you can suggest any improvements, I am open to receive them.

I think generally there is a great deal too much stress laid on the importance of top light even in portraiture. Painters get superb results with side light altogether, and I think where the contrasts are subdued by proper reflectors on the shadow side and the principal light somewhat subdued, we might have some deviation from the stereotyped gallery effect, of which, like Rosalind, I begin to weary. But portraiture is not my forte, and perhaps I ought not to advise.

ELIZA HENRY.

#### THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

Stated meeting held Wednesday evening, May 12th, 1897, the president, Mr. Joseph H. Burroughs, in the chair.

The Directors' monthly report was submitted as follows :

Your Board of Directors respectfully reports that it met for organization May 6th, and that the following sub-committees were appointed :

House—Charles R. Pancoast, John G. Bullock, F. Wm. Geisse.

Meetings—Walter P. Stokes, Henry Troth, H. H. Furness, Jr.

Library—Anthony W. Robinson, Wm. H. Roberts, F. Wm. Geisse.

Lantern—William H. Rau, Frank Bement, Dr. Benj. Sharp.

Membership—Anthony W. Robinson, George Vaux, Jr., S. Castner, Jr.

Publication—Edmund Stirling, Robert S. Redfield, Jos. H. Burroughs.

Finance—Robert S. Redfield, Chas. R. Pancoast, John C. Browne.

Messrs. Albert G. McElroy and Winthrop Sargent have been elected active members of the society. Miss Bertha M. Lothrop has resigned.

By the removal of the stairway from the space back of the developing rooms a storage room has been made available for the use of the society. The House Committee has, with the approval of the Board, adopted a rule that hereafter cameras and other apparatus left at the rooms by members must be kept in the storage room.

Mr. William Rau, chairman of the Excursion Committee, made a report relative to the trip to New York, April 27th, when a special tug was chartered by the society in order to enable the members to photograph the naval review on the occasion of the dedication of the Grant Tomb. The party went to New York and returned in a special car, and all the arrangements for their comfort and convenience were most satisfactory. There were forty-four cameras used on the trip, and over 1,300 exposures made. It was announced that the photographic results of the trip would be shown on June 2d.

Upon motion of Dr. Charles Schäffer, the committee was continued, and was increased to six.

Mr. John C. Browne submitted a report from the Entertainment Com-



mittee. Upon motion of Mr. John G. Bullock, the thanks of the society were extended to the committee, and it was, at its request, discharged. It was ordered that a new Committee on Entertainment be appointed.

The president appointed as the Entertainment Committee, Mrs. Benjamin Sharp, Mrs. Charles Schäffer and Miss Mary M. Vaux.

Mr. George Vaux, Jr., was appointed to fill the vacancy on the Excursion Committee.

Mr. Walter P. Stokes, chairman of a special committee of the Board of Directors on new quarters, made a detailed report as to the progress made. The report was, upon motion of Mr. John Carbutt, accepted and the matter referred back to the Board, with power to act.

An application for membership from Mr. Charles M. Taylor, Jr., ("The Gladstone"), proposed by Mr. Wm. H. Rau, was received and referred.

Mr. Thomas Wakeman Lane moved that the Board of Directors be requested to take into consideration the advisability of a celebration of the 35th anniversary of the organization of the society, on November 26th, 1897, or some other convenient date. It was agreed to.

Mr. John Binder, a visitor, gave a demonstration of the method of toning the National Photogravure Board, a printing-out paper which required no mount. Gold and platinum baths were employed, and the resulting prints were very rich and beautiful.

Mr. J. Horace McFarland exhibited a portable apparatus which he had devised for making vertical photographs of flowers in the field. The frame work was adjustable for different angles and, without the camera, weighs about 13 pounds. He also showed a focusing scale which he found of great use photographing flowers. It consisted of a series of half-inch steps, numbered; this, when placed among the flowers on the plate-glass rest, enabled him to adjust the focus to the best advantage without the slightest difficulty.

Mr. McFarland also gave a very complete demonstration of the process of printing with Velox paper, which he described as *the* printing process for busy men. It was a slow bromide paper in effect, and was developed quickly and easily.

EDMUND STIRLING, Secretary.

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Thos. H. McCollin & Co. have opened a branch house, Boardwalk and Michigan avenue, Atlantic City, where they are prepared to serve with the same promptness and efficiency their friends, with fresh chemicals, developers, etc., and have a stock of photographic apparatus, hand cameras, kodaks, shutters, etc., and all the various brands of plates, films, etc. They have also facilities for the development of plates and films, the printing and finishing of photographs by amateurs. All amateurs visiting this summer resort are cordially invited to make free use of the dark-room for change of plates and developing. Come; make yourself at home.



AMERICAN EXHIBITORS AT THE PHOTO EXHIBIT  
OF INDIA.

At the exhibition of the Photographic Society of India, the American exhibitors received high commendation. We give the following extract from the report in the *Journal of the Photographic Society in India*, March, 1897:

Passing by other English exhibitors of merit, there remains to be noticed the American landscape and seascape work. The best of this is that of Messrs. Pancoast and Bracklow, both of which have gained a commendation. This work is only un-medalled, because the landscape class has this year been, in a measure, and through no fault of the judges, starved out. Nothing happier can be conceived than No. 240, "Surf at Marblehead," or the "Delaware Breakwater," No. 127, by Charles R. Pancoast, both wonderful specimens of the seascape class. Mrs. Clarkson has come out at the top in another class, but that she is a dangerous competitor in seascape is shown by her "Sunset" "Mid Ocean," No. 132. Nor should Mr. Gould's or Mr. Hurndall's names be omitted from the list of successful Americans because they go uncommended. We hope to see more of their work.

No. 83, "In Tow," carries off a silver medal. It is a very striking picture. Three jolly boats coming from some pier or jetty to which all faces are turned, are being towed by a small steam-launch towards the ships in the distance. The whiteness of the boats and the froth of the waves they make as they cut through the water which sparkles in the sunlight, are portrayed with astonishing fidelity. One feels the brightness and dazzle of brilliant sunshine.

No. 92, "Mother's Posy," is a tender little scene, expressive of a pretty sentiment, but the very light red tone of the print is not pleasing. No. 96, "After Storm—Peace," is a very highly finished platinotype, and by Mr. C. F. Fuston well merits the bronze medal it has gained. Mr. V. Pont takes another for No. 99, "Pindri Valley," in which the familiar points of Himalayan scenery are all present; hills, snow, mist, rolling clouds, and deodars.

Mr. E. P. Youngerman's exhibits are all good. No. 109, "Memories," represents a beautiful woman in evening dress, with fur cloak falling from her shoulders, sitting by a table, fingering some flowers in a vase. No. 113, another portrait, shows the sheen on a silk dress very perfectly. No. 114, "In the Heart of Asia," by Mr. G. P. Symes Scutt, appeals less to us. It gains a silver medal in combination with another picture which unfortunately is not hung on the same wall. Mr. Pancoast sends several very interesting exhibits. No. 118, "Reuben and I," No. 123, "A Pathway to the Sea," and No. 125, "The Morning Toilet," are worthy of notice.



**BARGAIN LIST.—JUNE, 1897.**

**PORTRAIT CAMERAS.**

[For Lenses see Special List.]

- 1—11x14 Scovill Port. Camera,  
Bonanza holder, . . . . . \$35 00
- 1—11x14 Anthony Port. Camera,  
Benster holder, . . . . . 30 00
- 1—14x17 D. S. B. Portrait Camera, 40 00
- 1—5x8 Wet Plate Stereo. Camera,  
3 holders, . . . . . 20 00

**VIEW CAMERAS.**

- 1—6½ x 8½ Blair Rev. Back  
Camera, Back lens, 6 holders  
and tripod . . . . . 35 00
- 1—11x14 Copying Camera . . . . . 20 00
- 1—5x7 Eastman R. B. Camera, 3  
Holders, Steinheil lens, tripod, 35 00
- 1—6½x8½ New Model, lens and  
tripod, . . . . . 9 00
- 1—5x7 Ideal, 2 extra holders and  
special case, . . . . . 19 00
- 1—5x7 Blair, plain back, front  
focus, lens and tripod, . . . . . 8 00
- 1—22x28 American Opt. Co. View  
Camera, 22x28 Francois lens, 150 00
- 1—11x14 Flammang R. B. Cam-  
era, 4 holders, tripod, Eury-  
scope lens, Prosch shutter, . 100 00
- 1—5x8 Blair Lucidograph, . . . . . 4 00
- 1—4x5 New Model, . . . . . 6 00
- 1—8x10 Blair, Rev. Back, good  
order, . . . . . 18 00
- 1—5x8 Wet Plate Stereo Camera,  
1 pair Darlot lenses, 1 5x8  
Darlot lenses, . . . . . 10 00
- 1—4 x 5 New Model Outfit, . . . . . 6 50
- 1—6½x8½ Novelette Camera, two  
(2) extra Holders, Beck R. R.  
Lens, Canvas Case, in good  
condition. Cost \$107.00. Will  
sell for . . . . . 60 00
- 1—4x5 New Model Imp. Camera,  
Wray lens, 6 extra holders, . 34 00
- 1—5x8 Genessee Outfit, 3 extra  
holders . . . . . 13 00
- 6—¾ Scovill light-weight film  
holders, each . . . . . 1 00
- 1—Takiv Magazine Camera, . . . . . 2 50
- 1—Peep-a-Boo Camera, . . . . . 2 50
- 1—5x8 Blair Camera, with 6½x8½  
extension and 12 holders, . . 25 00
- 1—6½x8½ View and 2 holders . . 8 00
- 1—5x8 New Model Camera, . . . . . 10 00

- 1—5x8 Blair Single Swing View  
Camera . . . . . \$10 00
- 1—6½ x 8½ American Optical  
Co.'s View Camera, . . . . . 15 00
- 1—5x8 Boston Rev. Back Camera,  
new, with Orthoscope lens, . . 28 00
- 1—Student Camera, complete . . . 1 50

**HAND CAMERAS.**

- 1—Bull's Eye '97 and Case . . . . . 8 00
- 1—4x5 Cycle Poco R. R. lens,  
6 holders, . . . . . 18 00
- 1—No. 4 Kodak, good as new, . . 30 00
- 1—Night Hawk Camera, . . . . . 3 00
- 1—5x7 Folding Premo, R R lens, 24 00
- 1—4x5 Waterbury Detective Cam-  
era, 3 holders, . . . . . 8 00
- 1—No. 1 Kodak, . . . . . 5 00
- 1—5x7 Folding Kodak, new, . . . 45 00
- 1—4x5 Turnover Detective, new, 10 00
- 1—4x5 Climax Detective, new, 10 00
- 1—6½x8½ Premo Sr, no lens . . 28 00

**ACCESSORIES.**

- 1—4x5 Roll Holder for Hawk Eye . 5 00
- 6—Scovill Light-weight Holders,  
each, . . . . . 70
- 1—Photscript, . . . . . 2 00
- 1—Wood Stereo Exposer, . . . . . 50
- 3—Cross Collodion Filters, each . 1 00
- 1—11x14 Glass Bath, . . . . . 2 00
- 2—12x15 Glass Baths, . . . each 3 00
- 2—10x12 Printing Frames, each . 50
- 2—14x17 " " " . . . . . 1 25
- 1—Eastman 4 fold tripod, . . . . . 4 00
- 1—Pair large Beam Scales, 14 in., 2 00
- 1—McKee Embossing Press . . . . . 8 00
- 1—4½x5½ Eastman Roll Holder, 2 75
- 6—5x8 Scovill Film Holders, . . . 6 00
- 1—6x8 Cloud Vignetting Ground, 3 00
- 1—906, 8x14, Ground . . . . . 8 00
- 1—5x6 Burlap Ground . . . . . 3 00
- 1—Anthony's Electric Retoucher, 15 00
- 3¼x4¼ Washing Boxes, each, . . 50
- 2—Large Oak Show Frames, each 5 00
- 1—Cooper Enlarging Bromide  
Lantern, 5½ in. condenser . 25 00
- 1—15-in. Improved Eureka Bur-  
nisher . . . . . 25 00
- 1—Acme Print Trimmer, new, . . . 9 50
- 1—Baldwin Print Cutter, new, . . 10 00
- Lot of Picture Mats. Write for  
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- 1—18x22 Printing Frame, . . . . . 2 50
- 1—8x10 Printing Frame, . . . . . 40
- 1—14x17 Adaptable Washing Box . 4 50
- 2—6x8 Children's Backgrounds,  
3 00 and 4 00



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1—Seavey Swiss Cottage, . . . . .	5 00	1—4x5 Bausch & Lomb Shutter, . . . . .	8 00
1—Osborne's Rock Accessory, . . . . .	8 00	1—4x5 Gundlach R. R. Star, . . . . .	6 50
1—Osborne's Pillar Accessory, . . . . .	8 00	1—11x14 Francais Lens, . . . . .	40 00
Lot of second-hand backgrounds, 8x10 and 6x8, \$3.00 to \$6.00; write for particulars.		1—½ size Voigtlander Portrait, . . . . .	20 00
Peerless Varnish Pots, each, . . . . .	40	1—¼ Size Portrait Lens, . . . . .	4 00
1—4¼x5½ Negative Box, . . . . .	35	1—¼ Voigtlander Lens, . . . . .	9 00
1—Walmsley Reversible Finder, . . . . .	2 50	1—16x20 Darlot W. A. . . . .	35 00
1—Card-size Burnisher, . . . . .	3 00	1—6½x8½ Gundlach and Shutter, . . . . .	45 00
1—22x28 Moorehouse Display Album, . . . . .	9 00	1—Extra 4x4 Harrison Portrait, . . . . .	20 00
		1—¼ H B and H Lens, . . . . .	3 00
		1—½ Size Dallmeyer lens for cabinets, . . . . .	50 00
		1—5x7 Euryscope Lens, Prosch Shutter; list \$50.00, . . . . .	30 00
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		1—5x8 Gundlach Star Lens, . . . . .	12 00
		1—5x8 Darlot R. H. Lens, . . . . .	15 00
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1—16x20 Rapid Rect. Lens, . . . . .	30 00
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1—4x4 Voigtlander lens, . . . . .	30 00
1—Imitation Dallmeyer Lens, size 3¼x4¼, . . . . .	6 00
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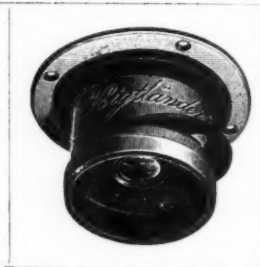
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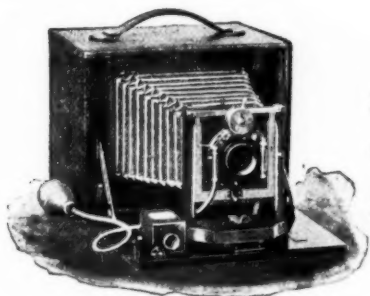


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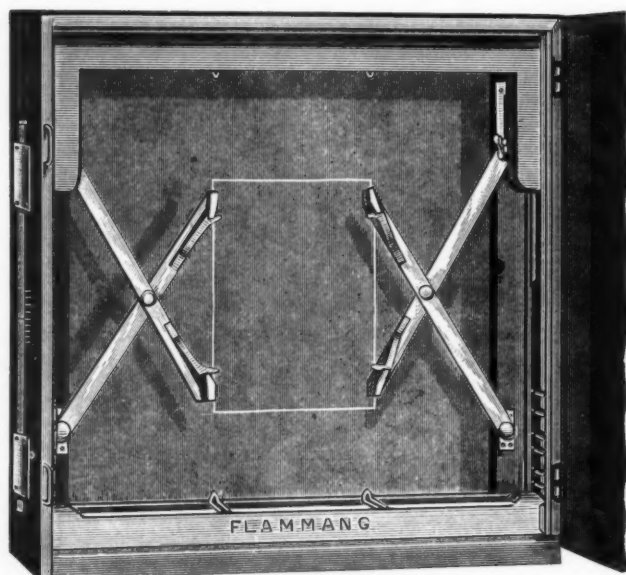
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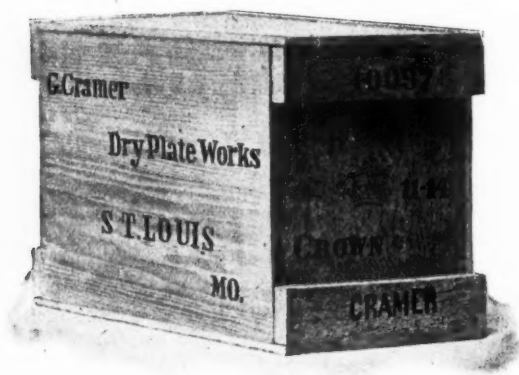
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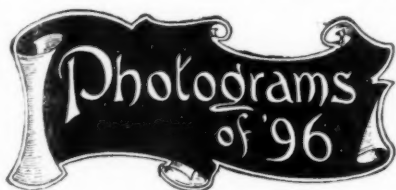
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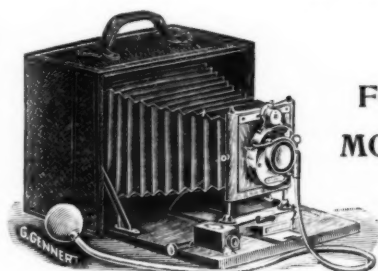
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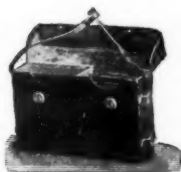
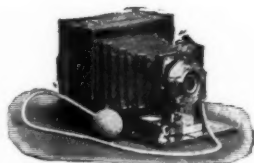
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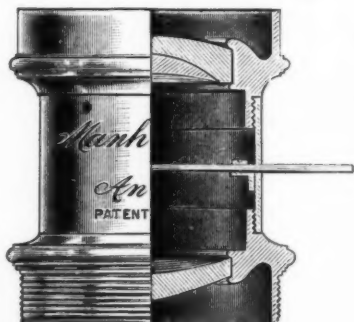
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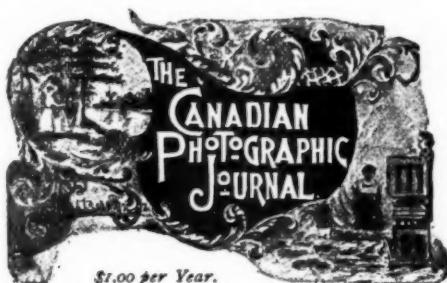
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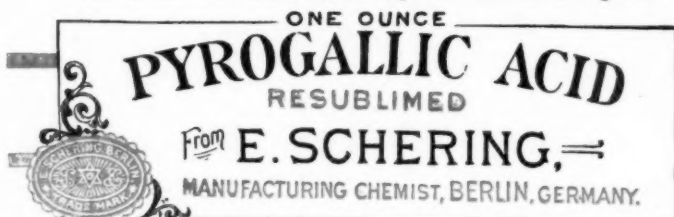


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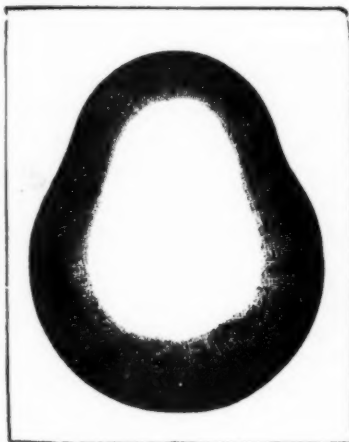
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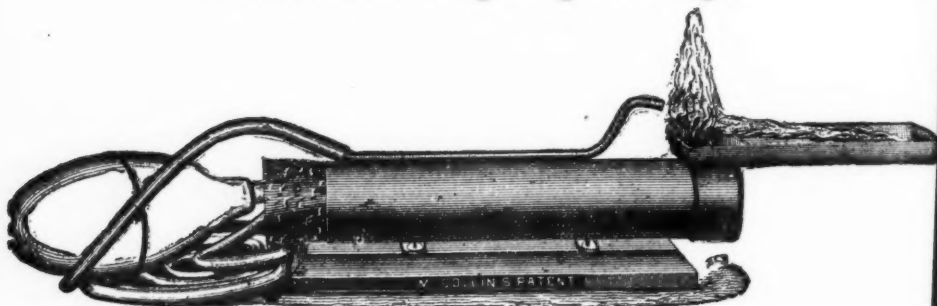
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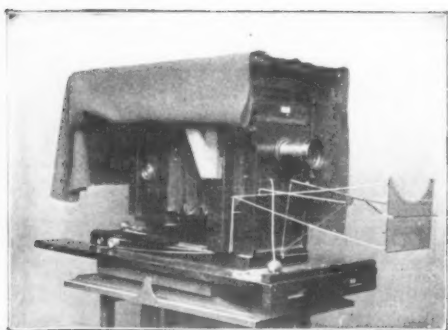
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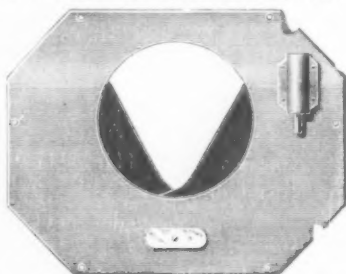
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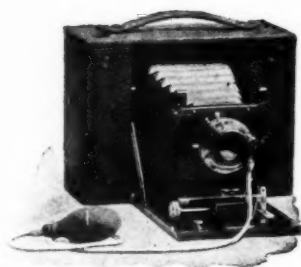
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